MANAGEMENT INFORMATION SERVICE

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# MANAGEMENT OF MUNICIPAL MOTOR EQUIPMENT

*What is general municipal policy with regard to ownership and control of motor vehicles? What principles and procedures of organization and administration result in efficient management of motor equipment?*

The purpose of this report is to revise two former Management Information Service reports: No. 28, *Management of City-Owned Motor Equipment*, November, 1946; and No. 64, *The Management of A Central Municipal Garage*, May, 1949. The basic principles of efficient motor equipment management have stood the test of time. More cities are sending inquiries to MIS, however, on various aspects of the control of municipal equipment and on compensating municipal employees for the use of their personal cars on city business. The inquirers are interested not only in the accepted principles and basic procedures but also in examples of other cities' forms, procedures, and policies. This report attempts to answer this need by setting forth the principles, highlighting them with the experience of selected cities.

This report is not a statistical analysis of practices, however. The *1956 Municipal Year Book*, pages 333-341, contains data on central municipal garages that are reasonably valid now. To update the past MIS reports, 22 cities were contacted to provide illustrative material: Tucson, Arizona; Anaheim, Berkeley, and Long Beach, California; Brookfield and Park Ridge, Illinois; Council Bluffs, Iowa; Escanaba, Muskegon, Pontiac, and Traverse City, Michigan; Scottsbluff, Nebraska; Hampton, New Hampshire; High Point, North Carolina; Cincinnati, Hamilton, and Springfield, Ohio; Dallas, Lubbock, and Waco, Texas; Tacoma, Washington; and Eau Claire, Wisconsin.

This report, further, does not cover the subject of leasing municipal equipment. Management Information Service report No. 175, *Leasing Municipal Motor Equipment*, August, 1958, covers this question.

## Private or City-Owned Automobiles

Private vs. City Ownership. The decentralized nature of many city services requires that a number of employees have on-the-job transportation. Building and health inspectors, public works foremen, visiting nurses, and others spend their time in the field. Providing automobile transportation for these people can be a sizeable expense. Should the city provide automobiles or pay the employee for the use of his own car?

A number of factors influence the decision of whether to provide cars or pay an allowance. The 22 cities contacted for this report expressed varying policies and practices. Six reported that city vehicles were provided with few exceptions; four cities exclusively pay an allowance; 10 cities supply vehicles to some employees and pay an allowance to others; and two cities have no set policies.

City ownership has a number of advantages with few drawbacks. First, the city pays only the actual cost of operation. The employee neither gains or loses financially from operating his car on city business. Second, employees are not required to make an investment in an automobile for employment purposes. Recognition should be given to the fact that when an employee supplies a car he often is depriving his family of transportation during working hours. His investment is at least partly in behalf of the city. Third, the type of car best suited for the work can be selected, and a

uniform appearance obtained with the name of the city on the car. Fourth, special equipment, such as two-way radio, can easily be installed. Fifth, a safety program can be enforced, including uniform maintenance standards. Sixth, the city can more readily control the movements of its employees.

Car allowance systems have one major advantage: possible lower cost. Sometimes it is economical for the city to pay an allowance instead of owning vehicles. The divergency of city practices is related to the cost item. In determining true cost all items should be considered: depreciation, insurance, gas, oil, anti-freeze, repairs, and servicing, including labor and administrative overhead.

The largest single factor influencing cost is frequency of use – the number of miles a vehicle is driven. Eau Claire, Wisconsin, reports that it is uneconomical for the city to own automobiles unless they are driven 15,000 miles per year, and Tacoma, Washington, encourages the use of private automobiles when mileage is less than 1,000 per month. Dallas, Texas, reports that the city supplies cars to all but a limited number of employees needing transportation. The majority of those receiving car allowances are construction inspectors and plant food inspectors who have limited needs but who would tie up a car the entire day.

Other factors also are involved in evaluating allowance systems and city ownership. The number of vehicles involved influences the economics of providing maintenance and servicing facilities. The small city usually cannot support such facilities, although there are a few cities under 10,000 population that do their own maintenance. An analysis of the use of cars will reveal if a car pool arrangement would be economical. If persons receiving car allowances can use a central pool, the number of cars needed can be reduced.

Berkeley, California, has a unique system of paying car allowances to all employees, including police officers, that need transportation. In 1959 a consultant studied the Berkeley system and recommended that the city own and supply vehicles to employees needing transportation. Two aspects of the report are interesting because they illustrate consideration of factors that influence cost.

First, the study revealed that the city is supporting by car allowance payments the operation of 68 vehicles in all departments except police and fire. The total cost of such allowances is approximately $25,533 annually. A careful analysis indicated that if vehicles were owned and supplied by the city only 31 vehicles would be necessary if a pool arrangement were utilized. This would cost the city approximately $20,876 annually, including depreciation, operation, and maintenance.

Second, the study considered the cost of additional facilities needed to convert to city ownership. The study concluded that additional parking facilities were needed but that if this cost ($8,500 for improvements to two lots) were amortized over 15 years city ownership still would be economically sound.[1]

Each city must evaluate its own situation based largely on the cost factors and the advantages of city ownership. A city with accurate equipment records will be able to determine at what mileage point city ownership is clearly uneconomical. In fact, central control of equipment is vital and is discussed below.

Car Allowance Systems. Although city ownership is preferable in most cases, cities face situations that lend themselves to the use of car allowances. Five basic methods are used to compensate employees for the use of their automobiles.[2]

1. Standard allowance is the payment of a flat rate per month, say $30 or $40. No consideration is given to the number of miles driven. This type of allowance is easily administered, but it has the serious drawback of being inequitable. It can result in paying too much or too little. Supposedly, a standard allowance is based upon the average miles driven times a rate per mile. However, all

[1] Ernst and Ernst, Report of Special Study on *Evaluation of Present and Alternate Vehicle Programs, City of Berkeley, California, January, 1959*, pp. 29-67. City Manager John Phillip reports that the city council now has the matter under study, and a decision should be rendered in the near future.

[2] Legislative Research Commission, Commonwealth of Kentucky, *Mileage Allowances*, 1957, p. 3. The terms used to describe systems in use by cities were taken from this report.

too often it becomes a negotiated figure and a subterfuge for a salary increase. In small cities where only one or two employees receive allowances it probably is reasonably equitable. Of the 22 cities surveyed for this report, nine use standard allowance for at least some employees.

2. Flat mileage rate is the payment of an allowance based on the number of miles driven at a set figure per mile. This system is the most common method of paying an allowance: 12 of 22 cities. The actual rate varies. Among the cities surveyed the rate ranged from a low of 6 cents per mile to a high of 9 cents. The most frequent rate is 8 cents. The flat mileage rate is popular because it is relatively easy to administer and is more equitable than the standard allowance since it recognizes the actual use of the car on city business. However, it does not recognize the fact that actual costs on a mileage unit basis decrease in relation to the miles driven.

3. Graduated mileage rate is the payment of different rates depending on the total mileage driven during any one period, usually a month. This system is equitable in that it recognizes not only use but also costs per mile in relation to distance driven. One city, Eau Claire, Wisconsin, reported using this system. At present the rate is 8 cents per mile for the first 300 miles and 6 cents per mile thereafter on a monthly basis. At present consideration is being given to adjusting the rates. (See "Determining the Car Allowance Rate" below.)

4. Combination allowance consists of a fixed allowance to cover fixed costs of operation and an amount per mile to cover operations. No city surveyed used this method, but San Diego formerly used this system for some employees. The system was abandoned in favor of the graduated mileage rate. The change was made because the combination allowance tended to overcompensate those employees who used their car frequently but with low mileage and undercompensated those with high mileage.

5. Multiple plans are used by several cities to compensate different groups of employees. For instance, Berkeley uses all four systems.

Determining the Car Allowance Rate. Eau Claire, Wisconsin, has recently completed a study of car allowances that recommends a graduated mileage rate of 20 cents per mile for the first 100 miles per month; 5 cents per mile for the next 200 miles per month; and 4 cents per mile thereafter per month. The method of arriving at the rates illustrates the basic considerations influencing costs.

First the fixed costs: depreciation, license fee, and insurance. Depreciation was determined on the assumption of trading for a new car every four years. Price quotations were obtained from automobile dealers selling one of the "low-priced three." The price quotations were based on a standard six cylinder, four-door, four-year old car being traded for a new comparable model. Depreciation per year equalled the average quoted price divided by four. Insurance costs were obtained by surveying the companies insuring city employees and striking an average. License fees of course were known.

One further step was taken in calculating fixed costs. By city records it was determined that the average employee drove his car on city business 40 per cent of the time and thus the city should compensate for only 40 per cent of the fixed costs.

Variable costs were based on the average charged by local automobile agencies converted to a per-mile basis. Variable costs are gasoline based on 15 miles per gallon; oil based on six quarts every 2,000 miles; lubrication every 1,500 miles; a new set of tires at 20,000 miles; a new battery at 20,000 miles; 12 car washes per 10,000 miles; winterization every 10,000 miles; and normal repairs.

The study revealed that the fixed costs were $16.47 per month (40 per cent of total fixed costs) and that the variable costs were $4.19 per 100 miles per month. This equalled $20.66 or a little over 20 cents a mile. To adjust for driving more than 100 miles per month the variable figure of $4.19 is added to $20.66 (cost for 100 miles) and the total of $24.85 is divided by 200 miles to equal 12.4 cents for 200 miles a month. The same process is followed to determine the cost for any given mileage.

In establishing the actual rate, the cost factors above may be tempered by city policy. Cincinnati pays 8 cents a mile to employees using their own cars. The figure is based on all items of cost

except depreciation. The official policy is that since a private vehicle is not used solely for city purposes depreciation would be present regardless of use. Pontiac, Michigan, reported that the low figure of 6 cents a mile was chosen because it was felt that being rather low in comparison to mileage allowances paid by other agencies it might reduce the desire of employees to use their own vehicles in performance of city business.

## Central Garage

Local governments traditionally have followed one of three major methods of maintaining and utilizing all motor equipment – cars, trucks, bulldozers, street sweepers, and so on.

1. First is the system of each department being responsible for its own equipment. The operating officials in each department assume responsibility for procurement, custody, assignment, care, and record-keeping for the equipment in their department. Departmental control can easily result in duplication of effort and use of equipment. It is not recommended except for the very small municipality which has only a few pieces of equipment. Even a small municipality that has a number of pieces of equipment can benefit by some type of centralization.

2. Second, a municipality may have centralized maintenance services. Under this plan departmental officials, under the direction of the chief administrative officer, are still responsible for procurement, custody, and assignment of equipment. However, a central garage is established with the basic responsibility of maintaining all or most equipment. This arrangement eliminates duplicate facilities and garage equipment. Under this system records can be centralized and regular periods for equipment service and inspection can be established. It also facilitates the purchase of supplies such as gasoline and parts. It has the disadvantage in that departmental officials still retain exclusive control over the use of equipment.

3. A third method is to establish a centralized equipment maintenance service and to establish central control over the procurement and use of equipment. This system allows for permanently assigning to certain departments equipment of a specialized nature or that is in use full-time. But more important it allows for the assigning of equipment on a part-time basis to different departments as the need may arise. This system has much to recommend it. It provides for not only central maintenance but also for the coordination of equipment use. It is the creation of a central garage having central responsibility for all equipment that is the keystone of efficient equipment management.

Exceptions to Centralization. There are few cities that have complete central control of *all* equipment. Of the 22 cities surveyed only one city, Pontiac, does not have a central garage. The police department operates one garage which maintains all automobiles owned by the city, and the public works department is responsible for all maintenance of heavy equipment and trucks. Further, the water utility and cemetery departments employ mechanics to perform minor maintenance and servicing.

The rest of the cities have varying degrees of centralization. To classify a city's garage as plan two or three above is difficult because of varying procedures and policies. Generally, there are several factors influencing the degree of centralization.

1. Does the city have equipment maintenance facilities that are under the direct supervision of an operating department other than the central garage?

2. What agency is basically responsible for purchasing new equipment and replacements?

3. What agency "owns" the equipment and how are purchases financed?

4. What agency is responsible for carrying out a preventive maintenance program?

Each of these items, except number one are discussed elsewhere in this report.

Of the 21 cities with central garages, 12 cities have garage facilities other than those under the central equipment unit. The cities of Lubbock and Waco, Texas; Long Beach, California; Tacoma, Washington; Springfield, Ohio; Eau Claire, Wisconsin; Brookfield, Illinois; High Point, North Carolina; and Escanaba and Muskegon, Michigan, maintain separate facilities for the maintenance and repair of fire apparatus. Tucson, Arizona; Hamilton, Ohio; and Dallas, Texas, report that the fire department

has facilities for minor repairs. Long Beach, California, has separate facilities for both the water department and the harbor department. Tacoma's water and light department also repairs its own equipment.

Fire department equipment is frequently excluded because of its specialized nature. A number of cities, particularly the smaller ones, find it necessary to contract with fire apparatus companies for all major repairs. Since firemen must of necessity spend much time on a standby basis, the department has personnel that can be trained to at least service and make minor repairs.

Cincinnati has an unusual arrangement which recognizes the specialized nature of fire equipment. The central garage maintains all fire equipment, but it is large enough to justify a special unit under the direction of the supervisor of fire apparatus maintenance. He is under the jurisdiction of the garage superintendent but acts as liaison officer between the two departments.

Organization of the Central Garage. The municipal garage should have basic control over equipment. However, the central garage should be viewed as a service organization much the same as centralized purchasing, personnel management, and financial management. Its primary duty is service to the operating department in the form of providing the equipment needed in good working order at the time it is needed.

The central garage to be effective must serve all departments. It thus can be reasoned that the central garage should be independent of any line department control. However, the 1956 survey for the *Municipal Year Book* indicated that 71 per cent of the reporting cities located the garage in the public works, streets, or engineering department. Often it is a separate division of the department but can be within a division. For instance, the street division of the public works department operates the garage facilities of St. Louis Park, Minnesota.

The principal justification for this practice obviously is that the major part of the city's vehicular equipment is operated by the public works department and therefore should be under the control of the department having the greatest interest in vehicle maintenance. Further, the public works department is generally the department that possesses the basic skills necessary to carry out this type of operation. The survey for this report covering 22 cities indicated that 14 place the municipal garage under the public works department.

Dallas, Texas, reported that the municipal garage was placed in the public works department as a division but for all practical purposes operates as an independent agency serving all departments. Lubbock, Texas, assigns the basic responsibility of the municipal garage to the assistant city manager. Long Beach, California, has a department of central services of which the municipal garage is one division. Park Ridge, Illinois, established the municipal garage as a separate department. The *1956 Year Book* survey showed that outside of public works or a separate department, the only other department responsible for the garage was the finance department, except in a few specialized cases such as Long Beach's department of central services.

Internal organization is largely dependent upon the size of the city and services offered. For an organizational chart of a large municipal garage see Figure 1.

Facilities and Services. The extent of services and facilities of a central garage differ among cities. Few cities have as complete an operation as Cincinnati, Ohio. The central garage maintains all equipment from the simplest of repairs to the most complicated. Besides the sections for automobiles, heavy equipment, trucks, and fire apparatus, a number of specialized units have been created. For instance, a machine shop is able to repair and make certain parts. A tire shop makes all repairs including vulcanizing plus repairing and fabricating special chains for unusual tire sizes. Other special units include upholstery, body, paint, battery and ignition, engine rebuilding, and lawn mower repair.

Most communities limit the service to repairs, service, and preventive maintenance. The *1956 Municipal Year Book* survey showed that 31 per cent of 305 reporting cities provided all maintenance services including transmission repair, overhaul, and body repair; an additional 39 per cent performed all these services except body work; 23 per cent performed repair work but not major repairs such as overhauls, and 7 per cent performed all work except major repairs. Naturally the

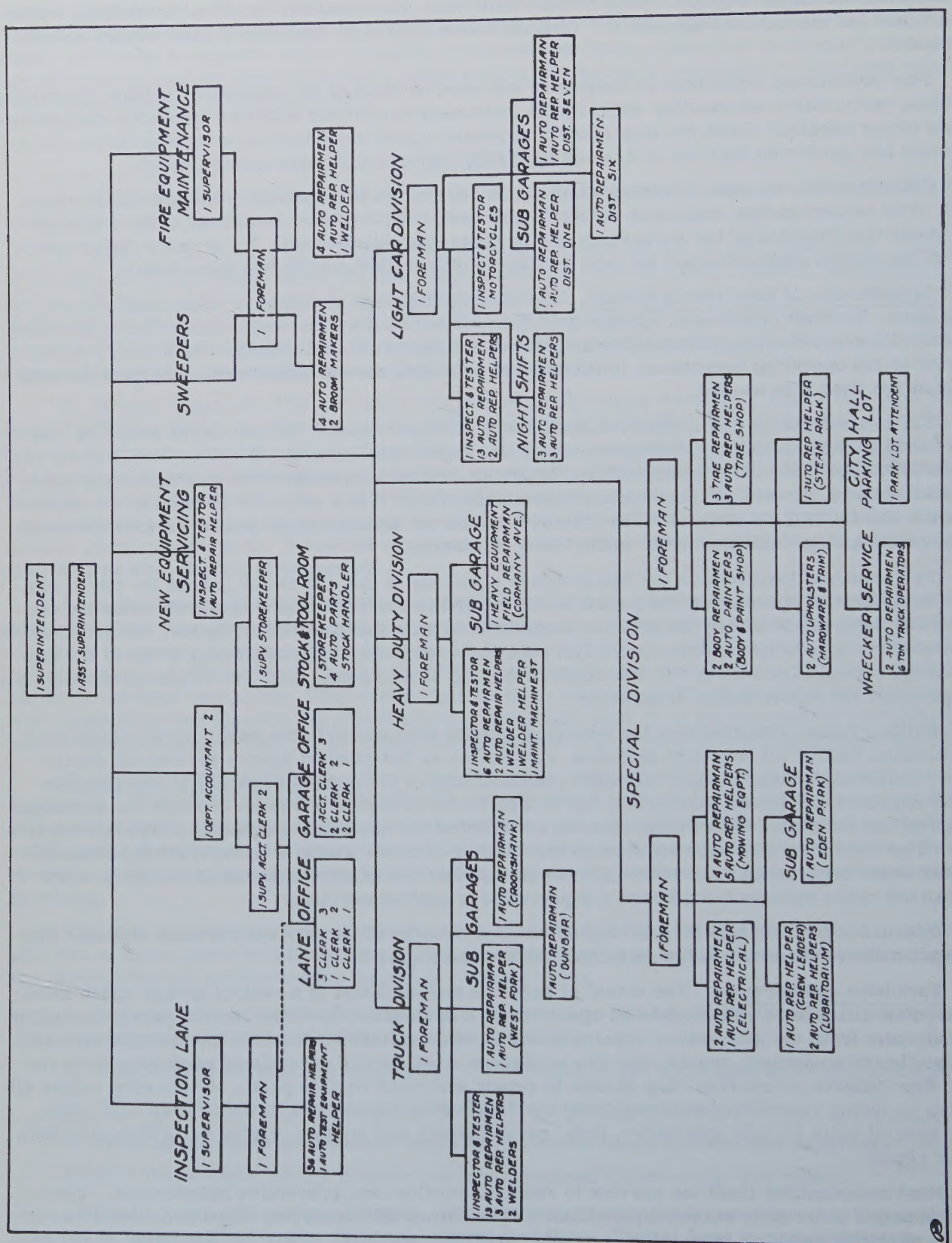


Figure 1 – Organization Chart of Municipal Garage, Cincinnati, Ohio

smaller the city the less likely that all work will be done. However even among the smaller cities (10,000 to 25,000), approximately 50 per cent reporting in 1956 performed all work except body repair and engine overhauls.

The extent of service is also dependent upon its availability. To offer service when needed and at the convenience of the operating departments, cities use three other devices: district garages, night service, and mobile repair units.

1. The district garage under the control of the central garage is found in the larger cities. Dallas, Cincinnati, and Long Beach operate district or subgarage facilities. Anaheim, California, reports that a garage facility is being constructed at the city's property maintenance yard to do all repairs except major overhauls. Long Beach's central garage has three facilities: a downtown garage for automobile servicing and repairing; a heavy equipment garage located next to the refuse collection yard; and a service station facility on the police parking lot. For the larger city, or one with a large geographical area, the district garage relieves the load of the central garage and offers convenience to the operating department by being placed geographically close to operations.

Cincinnati's pattern is typical. The city has nine auxiliary garages which are located at strategic points in the suburbs. Each garage normally is staffed by one mechanic who can do minor repairs and servicing to vehicles in the area. The mechanic also responds to road service calls thereby affording speedier service.

Dallas has four service centers geographically located at each corner of the city. The centers contain, besides garage facilities, units of street maintenance, sanitation, storm and sanitary sewers, all water department outside activities, and police substations. A fifth garage is located downtown to service all vehicles operating from city hall and the major portion of the police vehicles. All of the garages are self-contained units. (See Figure 2 for picture of one of the Dallas service centers.)

2. Night service is offered by some municipal garages. This allows routine service to be done during off hours, and it allows for a more even distribution of the work load.

3. Some cities operate mobile repair units. These units are equipped to do fairly extensive repair work in the field. Such units have greater value for large cities that own a number of construction-type units — bulldozers, shovels, graders, and so on. This allows repairs to be made at the job site, removing the necessity of transporting the equipment to a garage.

## Financial and Equipment Purchase Policies

Proper equipment management demands that definite and uniform policies and procedures be established for financing equipment purchase and maintenance. Policies and procedures should include a method of financing new equipment (additions) and replacement of equipment; (2) procedures of initiating and making purchases; and (3) means of financing garage operations.

Financing New Equipment. New equipment — that is, additions to fleet — should be financed by appropriations because the purchase of new equipment is a capital outlay.

Two basic methods are followed with slight variations. First is to appropriate the monies to the using department. Eleven of the 22 cities follow this method. In such case the operating department is considered as the "owner." Except for over-all supervision of preventive maintenance programs (discussed below) and cost accounting (discussed below) the municipal garage has the main function of repairing equipment on order of a department.

Second, the money is either appropriated to or transferred to an equipment fund. Frequently the department that needs the equipment initiates the budget request, but when approved the monies are placed in an equipment fund. In cities following this method the central garage has more control over the equipment program. In few cities is this procedure followed exclusively. Frequently fire equipment is financed from the operating fund. Also some cities, like Cincinnati, exclude equipment purchased for a city utility.

Financing Equipment Replacement. Financing equipment replacement also is done by direct appropriation to an operating department's budget or to a replacement or equipment fund. A method

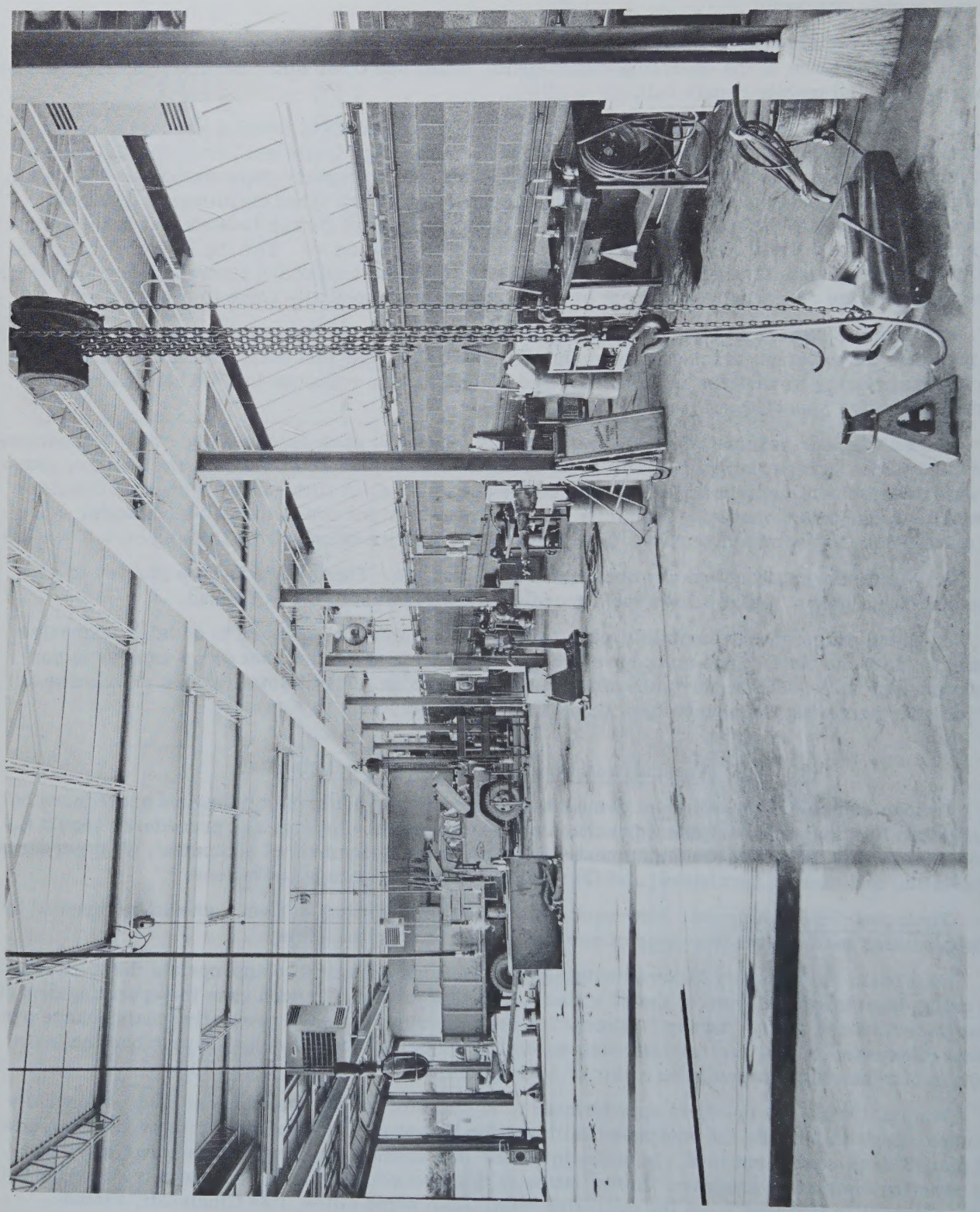

Figure 2 — Interior View of Northwest Dallas Service Center Garage

considered more desirable is to accumulate monies in a replacement fund over the period of equipment life. This is done by a system of rental rates which is discussed below.

The accumulation of monies over the period of equipment life has two main advantages. By spreading out the cost over several years fluctuations in the operating budget are avoided. Further, except where equipment is used exclusively for one function, the cost can be apportioned over the several functions the equipment is used on.

Cities should adopt replacement policies and schedules. Such schedules are based on age, mileage, and maintenance cost. For instance, Dallas follows a policy of replacing all equipment at five years of age or 60,000 miles, whichever occurs first. Berkeley replaces equipment in accordance with a predetermined three-year replacement schedule. Changes in the schedule are recommended due to emergencies by the equipment maintenance division and must receive approval of the director of finance and the city manager. Cities following a definite replacement schedule tend to give initial responsibility for replacement to the central garage superintendent.

Some cities follow a procedure of periodically reviewing equipment in regards to usage and maintenance cost. The fleet and stores supervisor of Tacoma makes the determination on when equipment should be replaced in cooperation with the using department. Replacement is based on age, use, condition, and *market value* of used equipment and on monies available for replacement.

Purchasing. Most cities in purchasing new equipment lodge responsibility in the operating department or in the central garage for initiating requests. Further, cities that practice centralized purchasing process equipment purchases through the purchasing agent. Specifications are prepared by the central garage for use of the purchasing agent, frequently in cooperation with the line department. Of course all units to be purchased receive formal budget approval.

Two cities, Cincinnati and Tucson, report that an equipment committee reviews all requests for equipment. The city manager of Cincinnati appointed a municipal equipment committee consisting of the executive assistant to the city manager; director of public works; city budget officer; city purchasing agent; and the superintendent of automotive maintenance and inspection.

Tucson's equipment survey board is responsible for the disposition of old and obsolete equipment only. When the board decides that a particular unit is unfit for further use it can be traded or scrapped as circumstances dictate. The purchase of new equipment is largely the responsibility of using departments. The usual procedure is for a representative of the using department and the auto shop superintendent to develop specifications which are passed on to the purchasing agent who then secures bids.

Central Garage Financing. Financing the central garage is done by one of three methods or a combination of methods. The three methods are rental rates, direct charges, and appropriations. In the case of rental rates the department pays a flat hourly or mileage rate to the municipal garage. When direct charges are made, each department pays for the actual labor, parts, gas, and other direct costs. The rental-rate or direct-charge system has the effect of making the garage self-supporting and distributing the cost of equipment operation and maintenance over the various municipal functions. If the city makes direct appropriations no attempt at distributing cost is made.

Tacoma's rental rate system is explained under the discussion on rental rates. The Long Beach, California, procedure illustrates the use of direct charges to finance garage operations.

"The Automotive Division maintains a rather complete cost accounting system. Costs of maintaining equipment, plus depreciation allowances are generally the basis for charges to using departments.... Earnings are normally equal to the total of all costs and charges. The major exception being flat rental charges for passenger cars where the earnings may be more or less expenses during a given period of time."

When direct charges or rental rates are used, accounting may be done through a separate fund, usually designated as a revolving fund; or a clearing account within the general fund may be used if a separate revolving fund is not legal. Clearing accounts would be charged with expenses of the garage and credited with payments of the department renting equipment.

Rental Rates. Budgeting for municipal transportation costs is considerably simplified if

charges are established for each piece of equipment that is to be rented by the municipal garage. By estimating the number of hours or miles he expects to use each piece of equipment, the department head can estimate his annual equipment cost for rollers, graders, power hammers, pavement breakers, and the like.

Rental charges usually consists of two elements: the cost of operations and a depreciation charge. The operating charge includes not only such direct costs as gas, oil, repairs, servicing, and the like, but also a share of the overhead cost. The depreciation charge consists of an estimated rate at which the capital investment of the vehicle is used up.

Rental charges can be based on estimates to get the plan under way, although the estimate should be replaced with charges geared to costs as soon as possible. A good source to obtain data from to make estimates is a nearby governmental district. Private firms renting equipment can also be helpful. The schedule of rates ought to be printed and made available to all city departments. Revisions of the rate schedule may be necessary as economies are achieved or costs rise. Further, the schedule ought to separate the operating charges from the depreciation rates so that departments renting the equipment can see what they are paying for. Appendix A gives the make-up of Tacoma, Washington's, rental rates.

## Other Administrative Problems

In developing, organizing, and reviewing equipment management, consideration should be given to the operation of an equipment and car pool, purchasing of garage supplies and materials, preventive maintenance, rules and regulations for operation of equipment, and marking city vehicles.

Equipment and Car Pool. Full economy usually cannot be realized unless the use of equipment and vehicles is pooled. The extent that the pooling of equipment and vehicles can be done depends on several factors.

First, the central garage, if any, should have supervision over the use of equipment. If maximum utilization is to be obtained, someone must be responsible for assigning equipment. Second, an up-to-date analysis of equipment needs of each department is necessary. Some equipment, whether construction or vehicular, will be needed full time by departments. Certain functions require specialized equipment that can be permanently assigned to a department.

Only six cities reported that construction equipment was placed in a pool. Two others reported that a limited number of trucks were placed in a pool. Dallas reported: "All equipment not required daily by the various departments is in effect a pool and can be used by any needing department." The central garage of Muskegon, Michigan, rents certain equipment, such as saws, mowers, compressors, and cranes, to departments as needed. Further, all large equipment is rented with an operator.

Nine cities operate a car pool to supply the needs of employees not needing a car full time. Pool cars are usually under the control of the central garage, although Lubbock, Texas, operates a car pool at the city hall for use of employees in that building.

Purchasing Garage Supplies. Purchasing tools and garage supplies should be done by the city purchasing agent. As in the case of motor equipment the garage superintendent should provide technical assistance as to the quantity and quality of the supplies needed. Eighteen of the 22 cities have the purchasing agent supervise the acquisition of parts and supplies. One city assigns purchasing of repair parts to the street superintendent who is in charge of the central garage.

Gasoline and oil should be purchased on annual contract by bids. Underground storage is a necessity in any plan to purchase gasoline economically. Even small cities will find that providing storage is economical when gasoline can be bought at below-retail prices. Tires also should be bought on a bid based on the cost and service record kept on each type of tire.

Maintenance and repair parts should be kept under lock and key at the garage. A perpetual inventory system should be maintained with actual counts of the stock made every year. No supplies should be given to any mechanic without a receipt stating the job number, mechanic's number, date, and the quantity and number of the item requested. The stores clerk should keep an eye out for

stock falling below the minimum supply agreed upon by the purchasing agent and the garage superintendent. One general rule is that maximum stock to have on hand is the supply that would be used during the length of time it takes to replenish it. If it takes two weeks to replenish a certain item, then a two weeks supply is the maximum amount to have in the stockroom.

In some cities inadequate space, poor layout, and disorderliness characterize the stockrooms in central garages. Unfortunately, the storing of supplies is treated as an incidental in the management of the garage. The problem is particularly difficult for the small cities where a full-time storekeeper is not warranted, and yet some control is needed over parts and supplies. As a rule, plenty of shelves and stock bins clearly marked with identifying tags as well as neat, efficient piles of supplies too large for the bins, all behind locked doors, are the mark of a well-kept storeroom. If all this is controlled by accurate inventory records, then the storeroom is a well-managed one. Few cities need the elaborate facilities of Cincinnati as shown in Figure 3, but they should provide that parts be kept under lock and key.

Most cities stock only parts used frequently such as spark plugs, points, and brake linings. This is to avoid keeping a large inventory and running the risk of having obsolete parts. Tacoma has arranged with local dealers to keep the supply of parts up to date. Further, it may be necessary to keep large mechanical units in stock to avoid long periods of down time. Long Beach follows this procedure by stocking complete units, such as refuse packer truck motor, transmission, and differential.

To avoid stocking parts some cities follow a procedure reported by Dallas. "Wherever practical, all supplies and parts... are bought on prearranged contracts which usually are of a year's duration. We have found that such prearranged contracts eliminate many of the problems of procurement."

Preventive Maintenance. The control over preventive maintenance is one of the indications of the central garage's effectiveness in obtaining full utilization and proper use of equipment. The investment in equipment is extensive for any municipality. To obtain maximum use at lowest cost it is necessary to assure that equipment will be properly maintained.

Most authorities agree that the central garage should be responsible for making sure equipment is regularly serviced. Fifteen of the 22 cities have a coordinated program supervised by the central garage. Such programs assure what should be done, when it should be done, and who should do it.

Preventive maintenance should begin at the time of equipment purchase. Establishment of proper specifications prevents the purchase of equipment that is undersized or oversized. Further, scheduling equipment purchases helps assure that enough equipment is available to meet the needs of the city. Prior to the spring of 1959, Tucson had placed into effect a preventive maintenance


Figure 3 — Stock Room Facilities, Cincinnati, Ohio, Municipal Garage

program. However, because of annexations since that date, tripling the city size, equipment has been overtaxed. The city states: "Much of this equipment is old . . . and breakdown maintenance soon increased to the point where preventive maintenance was no longer possible."

Effective preventive maintenance is achieved through the establishment of policies and procedures. Before Tucson was temporarily forced to discontinue preventive maintenance a three-part program was used. First, all vehicles were periodically steam-cleaned. This enabled the greasemen and mechanics easily to locate worn and broken parts. Second, a regular lubrication schedule based on mileage or time was established. As an example, all passenger cars were greased at 1,000 miles and the oil changed at 2,000 miles. Loaders, graders, and sweepers were greased once a week and the oil changed twice a month. The third phase of the program called for a complete inspection of the equipment every 10,000 miles.

Cincinnati provides an example of another program.

In the case of light cars the grease rack is the initial point of inspection. A complete visual study of the vehicle is made along with the thousand-mile service, followed by a road test with the tester and inspector. A complete record of service rendered in the past is available in order to substantiate the repairs or the condemnation of any equipment. Sub-stations have been established in the outlying areas to accommodate suburban operations.

Trucks and load packers are operated with the emphasis on the district mechanics who are located at the operating points of Waste Collection and Highway Maintenance. With this type of maintenance control, all hourly and mileage service can be rendered with the minimum of down-time to the equipment and produce better relations with the operational department.

In reference to heavy duty and specialized equipment, preventive maintenance is a condition where the operator and mechanic work as a team, with the operator performing the ten to one-hundred hour service and inspections and the mobile grease unit along with a field mechanic and helper performing the service and inspections for a hundred hours and over. Using this method of service and records a good prediction of repairs can be made to the extent that crowding of the garage can be prevented by proper scheduling for repairs.

All preventive maintenance schedules are governed by factory recommendations and performed in the above manner.

To insure that a planned program is carried out accurate records are needed. First, an inspection report form should be used. This insures that the mechanic checks all major items and if work is needed that it is recorded and done. The actual form varies among cities. Some provide for a checklist while others provide for actually recording the condition of equipment. Figures 4 and 5 illustrate two types of equipment records.

A second form is the service record. All work done on equipment should be recorded. When inspections are made, the mechanic can easily determine what has been done and what needs to be done. Figure 6 illustrates the service record of Scottsbluff, Nebraska. The Scottsbluff form combines both service and repair work. Some cities establish separate records such as a record of lubrication and oil change and a record of brake inspections. Figures 7 and 8 illustrate the separate record.

Rules and Regulations. Few cities have developed written rules for the operation of motor vehicles and equipment. The two areas which receive the most attention are procedures in case of an accident and those in which employees can take city vehicles home at night.

Accident procedures call for notification of city police and the reporting in writing of the accident. Such reports are usually reviewed by a city attorney, personnel officer, or accident review board. Appendix B sets forth the Dallas rules concerning accidents. Cincinnati uses a procedure worth noting for cities that are self-insured. Drivers are given a form letter to give to the other person involved in the accident. The form sets forth the procedure for the person to follow if he believes that he is entitled to damages. The procedure is that a written claim must be made to the city attorney, two estimates must be obtained from private garages, and an estimate must be made by the municipal garage.

The second area that rules should be established for is who may take city vehicles home. Policies vary with no clear-cut pattern. Basically, employees subject to 24-hour call should be allowed to take cars home. The problem is who approves and decides which employees qualify. Several

Form No: 100-2M-6-50

INSPECTION REPORT

CITY OF CINCINNATI
DEPARTMENT OF PUBLIC WORKS
MUNICIPAL GARAGE

Equipment No..... Date.....195..

Department..... Report No.....

Make..... Model.....

Inspection Ordered by.....

Inspection Caused by.....

Inspection Made by.....

| Items | CONDITIONS AND REMARKS |
|---|---|
| Axle Front | |
| Axle Rear | |
| Battery & Cables | |
| Cab or Body | |
| Brakes & Controls | |
| Carburetor | |
| Clutch | |
| Cooling System | |
| Fan | |
| Fenders | |
| Frame | |
| Fuel System | |
| Generator | |
| Horn | |
| Hoist | |
| Ignition | |
| Lights | |
| Motor | |
| Muffler | |
| Oiling System | |
| Running Boards | |
| Shock Absorb's | |
| Speedometer | |
| Springs | |
| Starter Motor | |
| Steering | |
| Tires | |
| Transmission | |
| Universals | |
| Upholstering | |
| Wheels | |
| Windshield | |

Figure 4 — Equipment Inspection Report, Front Side, Cincinnati, Ohio

SPECIAL EQUIPMENT

| Items | CONDITIONS AND REMARKS |
|---|---|
| Blades or Scrapers | |
| Booms or Cables | |
| Brooms or Brushes | |
| Chains or Drive | |
| Compressor and Controls | |
| Conveyors or Belts | |
| Gauges | |
| Hoisting or Mixer Drums | |
| Hydraulic System | |
| Motor | |
| Operating Valves & Levers | |
| Pipes & Sprays | |
| Pumps | |
| Shoes | |
| Tanks | |
| Winches | |
| Miscellaneous | |

INSPECTOR'S REMARKS

Give below all Remarks, Opinions, Recommendations, Disposition Made, and any other data not provided elsewhere in this report:

To

This equipment has been inspected by me and conditions noted. I herewith submit my Report with Disposition and Recommendations made, for your approval.

Signed:

Inspector

Date 195

MISCELLANEOUS NOTES

| | | |
|---|---|---|
| Speedometer Reading | | Miles |
| Oil Pressure Gauge Reading | | |
| Are Brakes in Good Condition? | Yes | No |
| Is Generator Charging? | Yes | No |
| Do All Lights Burn? | Yes | No |
| Are All Body Bolts Tight? | Yes | No |
| Are All Tires Properly Inflated? | Yes | No |
| Is Adequate Equipment Carried? | Yes | No |

Is Equipment Properly Oiled and Greased?
Answer.

Has This Equipment Been in an Accident?
Answer.

Has Accident Report Been Filed?
Answer.

What Is General Condition of Equipment?
Answer.

Did You Ask for Equipment to Be Sent in for Overhauling? Yes No

INSPECTOR'S CLEARANCE

The undersigned certifies that the Inspection and service in connection with this Report is satisfactory, and requests filing or

Signature

Title

Department Date 195

Figure 4 — Equipment Inspection Report, Reverse Side, Cincinnati, Ohio

FORM NO. 96-10 **EQUIPMENT INSPECTION REPORT**

DATE _____ EQUIPT. NO. _____

SPEEDOMETER READING _____

LICENSE NO. _____

| | CONDITION | |
|---|---|---|
| | FOUND | LEFT |
| Head lights | | |
| Tail lights | | |
| Stop lights | | |
| Directional lights | | |
| Clearance lights | | |
| Windshield Wiper | | |
| Service brakes | | |
| Hand brakes | | |
| Brake lines | | |
| Steering gear | | |
| Drag link | | |
| Tie rod ends | | |
| Spindle bolts | | |
| Horn | | |
| Rear view mirror | | |
| Clutch pedal clearance | | |
| Battery level | | |
| Tire pressure | | |
| Air Cleaner | | |
| Breather Cap | | |
| Anti Freeze | | |
| Hitch | | |
| End Gate Snaps | | |

REMARKS; _____

CHECKED BY _____

DATE: _____ EQUIP. NO. _____

**DUMP TRACTOR**

**INSPECTION AND LUBRICATION**

**COOLING SYSTEM**
- REMOVE TRASH ☐
- FILL RADIATOR ☐
- CHECK ANTIFREEZE ☐ (ADD IF ABOVE 15°)
- CHECK HOSE ☐
- TIGHTEN CLAMPS ☐
- TIGHTEN FAN BELT ☐
- TIGHTEN GEN. BELT ☐

REPORT ANY LEAKS OR DAMAGE

**ENGINE**
- CHECK FOR OIL LEAKS ☐
- CHECK FOR FUEL LEAKS ☐
- CHECK FOR NOISE ☐
- CHECK HEAT INDICATOR ☐
- CHECK OIL GAUGE ☐
- CHECK FUEL GAUGE ☐
- CHECK RAIN CAP ☐

REPAIR OR REPORT

**TRANS. - FINAL DRIVE**
- CHECK FOR LEAKS ☐
- CHECK FOR CRACKS ☐

REPORT ANY DAMAGE

**TRACKS**
- ADJUST IF NEEDED ☐

**ROLLERS**
- CHECK MOUNTINGS ☐

**BULL CLAM**
- CHECK OIL LEVEL ☐
- CHECK HOSE ☐
- CHECK PIPES ☐
- CHECK PUMP ☐

REPAIR OR REPORT ANY LEAKS OR DAMAGE

**CHASSIS LUBRICATION**
- FOLLOW LUBRICATION GUIDE ☐

**BATTERY**
- CHECK WATER LEVEL ☐
- CHECK CABLES ☐
- TIGHTEN HOLD-DOWN COVER ☐

**ENGINE OIL**
- CHANGE OIL & FILTERS (EVERY TWO WEEKS) ☐

**FUEL FILTERS**
- CHANGE EVERY 4 WEEKS ☐

**AIR FILTERS**
- REMOVE AND STEAM (EVERY TWO WEEKS) ☐

**STORAGE TANK**
- CHECK PUMP ☐
- CHECK HOSE ☐
- DRAIN WATER ☐

WRITE WORK ORDER FOR ADDITIONAL WORK

REMARKS: _____

LOCATION: _____

CHECKED BY: _____

Figure 5 — Equipment Inspection Reports, Dallas, Texas

cities allow department heads to make this decision as in the case of Cincinnati where 40 per cent of the city's passenger vehicles are taken home at night. Other cities establish lists of persons who may take cars home. As an example, Pontiac's policy lists the following: city manager; city building, sidewalk, plumbing, and electrical inspectors; recreation personnel supervising evening programs; health department supervisors; and police department bureau chiefs. A few cities, particularly the smaller ones, permit no cars to be taken home except in cases of emergency. Tucson has established a procedure of assigning vehicles on either an eight-hour or 24-hour basis. Assignments are reviewed every six months and must have the approval of division head, department head, director of public works, and the city manager.

Marking Vehicles. Most cities follow some uniform system of marking vehicles and equipment. From an administrative viewpoint each vehicle or piece of equipment should be marked with an identifying number. Some cities use the city seal along with the name of the city and department and division. Tucson follows this procedure. Other cities simply place the name of the city and

Equipment No. _____ Purchase Date _____

Type _____

**City of Scottsbluff**

## Equipment Service Record

| DATE | MILEAGE | GREASE | OIL CHANGE | NEW FILTER | AIR CLEANER | TRANS. | DIFFER. | BATTERY | TIRES | BRAKES | OTHER | BY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |
| | | | | | | | | | | | | |

**Figure 6 — Front Side Equipment Service Record, Scottsbluff, Nebraska (Reverse side provides space to record repairs and parts by date)**

**SERVICE RECORD** AUTOMOTIVE DIVISION CITY OF LONG BEACH NO. _____ NO. _____

| DATE | SPEEDO READING | CRANK-CASE | | LUBRICATION | | | | | | Change Oil Filter | Clean Air Filter | INITIAL | WKLY. PACKER SERVICE | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | QTS | SAE | Chass | TRANS 1 | TRANS 2 | Diff. | Power Steer | Mast. Cyl. | | | | Date | Date | Date | Date |
| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | |

**Figure 7 — Service Record, Front Side, Long Beach, California**

GOOD 1957 Chev. CAUTION 431 REPLACE

| DATE | MILEAGE CHECKED | MILEAGE DUE | MILEAGE INSTALLED |
|---|---|---|---|
| 10-23-58 | | 20,000 | 10,909 |

**Figure 8 — Brake Check Record, Hamilton, Ohio**

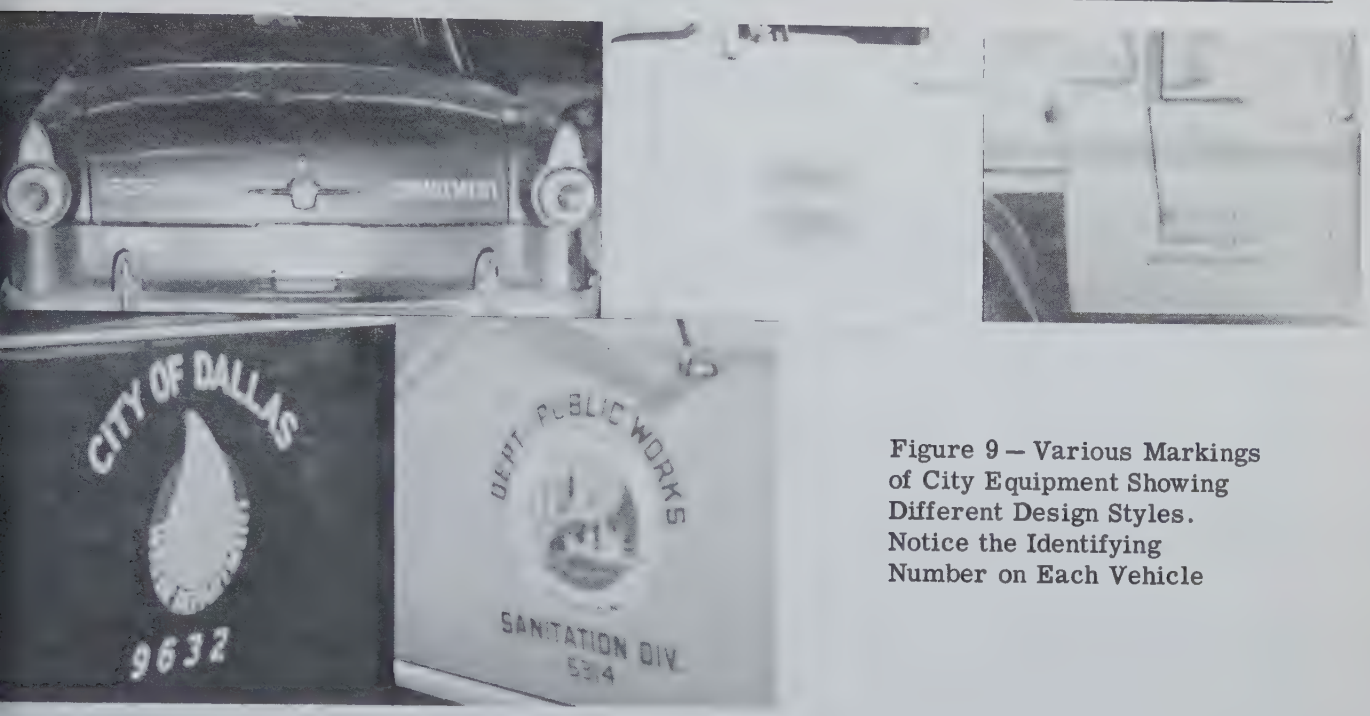


Figure 9 – Various Markings of City Equipment Showing Different Design Styles. Notice the Identifying Number on Each Vehicle

department as does Hamilton, Ohio, and Traverse City, Michigan. Dallas only shows the name of the city. A few cities may place slogans on special equipment such as street flushers: "Your City – Keep It Clean." Cincinnati marks the side of its vehicles with the city seal and also plainly marks the rear of the vehicle with the department and equipment number. Police and fire vehicles, of course, receive special identifying markings. See Figure 9 for illustrations of various types of markings.

## Equipment Records

Good equipment management requires complete records. Records provide the basis for determining costs and, as has been seen, setting preventive maintenance schedules. The Municipal Finance Officers Association (1313 East 60th Street) has published a booklet entitled *Accounting for Government-Owned Motor Equipment* that sets forth in detail specific procedures for compiling equipment expense and operating data, and general ledger control of equipment accounts. This publication should be referred to in revising or setting up an accounting system. This report will attempt only to highlight basic forms and procedures.

Records Responsibility. Many of the records are used as the basis for tabulating data used in cost accounting and general ledger control. Because of this some cities lodge the record-keeping function in the finance department. However, most cities follow the procedure of lodging record-keeping within the municipal garage, and the finance department provides technical supervision. The garage must frequently use the records, and there is no need to burden the finance department with the detailed records.

Basic Cost Records. Each city must develop a system of records to provide cost and operating data. Detail and method vary, but certain records are necessary. Several of these have already been discussed.

1. The basic record is the "Individual Equipment Record." This record is kept for each piece of equipment and shows identifying information and detail as to cost, including depreciation and overhead. Some cities also use an "Equipment History Record" which shows when and from whom a unit was purchased, purchase price, cost of additions, depreciation schedule, and sale price of the equipment when and if sold. Other cities combine this data with the "Individual Equipment Record."

No. 50101

CITY OF MUSKEGON • MICHIGAN

DATE & TIME

| DEPARTMENT & VEHICLE NO. | MILEAGE |
|---|---|
| POLICE NO. | |
| HIGHWAY NO. | |
| SANITARY NO. | |
| RECREATION NO. | |
| OTHER NO. | |

YOUR SALE NO. | GALLON READING - FINISH | 10ths

PREVIOUS SALE NO. | GALLON READING - START

GALLONS OF GASOLINE

QTS. OF OIL NO.

DRIVER • AMOUNT OF GAS •

OPERATOR •

Figure 10 — Gas and Oil Ticket, Muskegon, Michigan

2. A "Repair Order Form" is used to record and authorize all repairs. This information is then transferred to the "Individual Equipment Record."

3. A "Gas and Oil Ticket" is necessary to record the use of these supplies for each piece of equipment. The gas ticket can also be used to indicate mileage of each vehicle.

4. A summary sheet of daily expense is often used to tabulate data on each piece of equipment throughout the month. The total of this sheet is then transferred to the "Individual Equipment Record."

Muskegon, Michigan, Procedures. The procedure in Muskegon illustrates the use of these forms. Each of the forms mentioned is shown: Figure 10, "Gas and Oil Ticket;" Figure 11, "Daily Summary Sheet;" Figure 12, "Repair Order;" and Figure 13, "Individual Equipment Record."

All gas and oil is issued on the gas and oil ticket (Figure 10), the second copy of which is forwarded to the equipment office. The amount of gas and oil is then recorded by quantity and cost on the "Daily Individual Equipment Summary Sheet" (Figure 11). A repair order (Figure 12), which is made out in the garage, also comes to the equipment office with parts and labor listed and is compiled on the "Daily Individual Equipment Summary" (Figure 11).

At the end of each month the "Daily Equipment Summary" (Figure 10) is totaled and entered on the "Individual Equipment Record" (Figure 11), which is kept up each year the vehicle is owned. On the back of Figure 11 the recovery that each vehicle earns for the equipment division is posted.

At the end of the year, the total expenses, plus a percentage for overhead, is balanced against the revenue received to see if each piece of equipment is paying its own way, or whether certain rates have to be changed in order that each one is carrying its share of the burden.

Operating Data. When the garage is financed by direct charges, the totals of the "Individual Equipment Record" (Figure 11) serve as the basis of making the proper credits and charges to the ledger accounts. When a system of rental rates is used, it is necessary to provide operating data; that is, the number of miles or hours the equipment is used and to what account the rental should be charged. A form is usually provided that can be filled out daily as to operation. These data are then summarized, and rental charges made to the proper accounts. Further, the amount of rentals earned by each piece of equipment is recorded, as indicated by the discussion of Muskegon's cost records.

DAILY EQUIPMENT SUMMARY SHEET MONTH_____

| | MILEAGE | GASOLINE | | OIL | | MISCELLANEOUS | | | REPAIR LABOR | | REPAIRS | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DATE | | GALS. | COST | QTS. | COST | AMT. | COST | DESCRIPTION | HRS. | COST | DESCRIPTION | WAREHOUSE OR ORDER NO. | REPAIR PARTS | OUTSIDE REPAIRS |
| 1 | | | | | | | | | | | | | | |
| 2 | | | | | | | | | | | | | | |
| 3 | | | | | | | | | | | | | | |
| 4 | | | | | | | | | | | | | | |
| 5 | | | | | | | | | | | | | | |
| 6 | | | | | | | | | | | | | | |
| 7 | | | | | | | | | | | | | | |
| 8 | | | | | | | | | | | | | | |
| 9 | | | | | | | | | | | | | | |

Figure 11 — Daily Equipment Sheet, Muskegon, Michigan

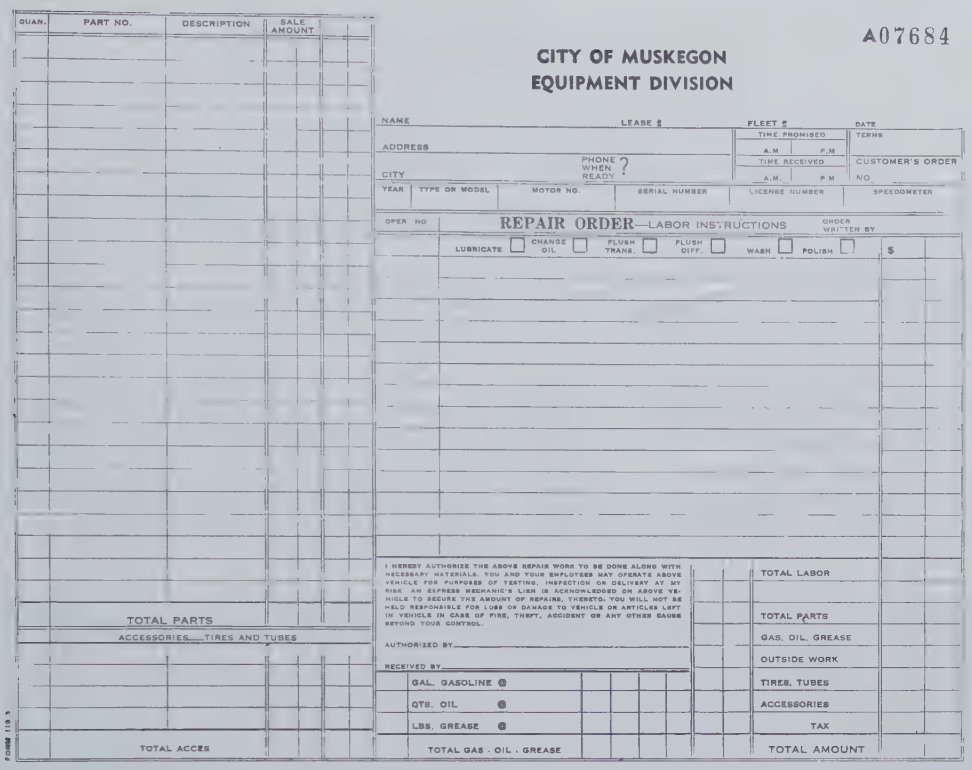


Figure 12 — Repair Order, Front Side, Muskegon, Michigan

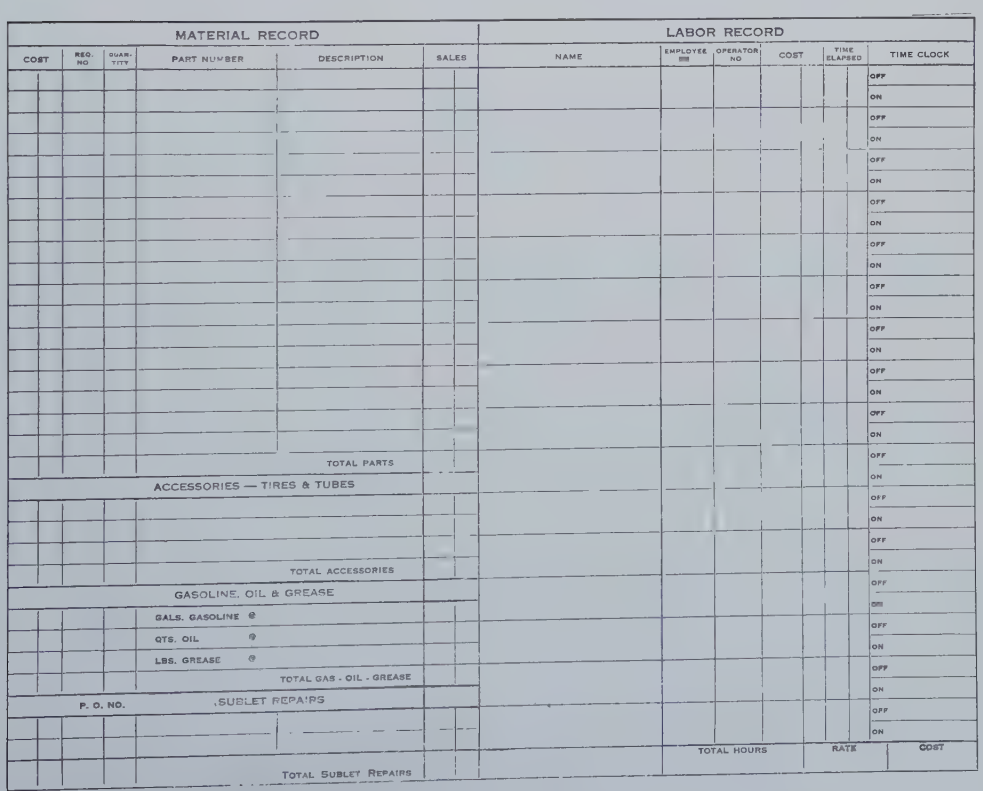


Figure 12 — Repair Order, Reverse Side, Muskegon, Michigan

CITY OF MUSKEGON, MICHIGAN

INDIVIDUAL EQUIPMENT RECORD

Equipment No. _____ Make _____ For Year Ending _____

Motor No. _____ Date Purchased _____ Estimated Salvage Value _____

Serial No. _____ Original Cost _____ Remaining Depreciation _____

Value Start of this Year _____ Estimated Depreciation This Year _____

| Month | Mileage First of Month | Miles Run | Gasoline | | Oil | | Misc. Fuel, Etc. | | | Repair Labor | | Repair Parts | Tires | Outside Repairs | Total Cost |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Gals. | Cost | Qts. | Cost | Amt. | Cost | Descri. | Hrs. | Cost | | | | |
| Jan. | | | | | | | | | | | | | | | |
| Feb. | | | | | | | | | | | | | | | |
| Mar. | | | | | | | | | | | | | | | |
| Apr. | | | | | | | | | | | | | | | |

Figure 13 — Individual Equipment Record, Muskegon, Michigan

*Acknowledgement:* Management Information Service wishes to thank the City Officials who supplied the detailed information for this report.

*Note:* This report was prepared by William E. Besuden, staff member, the International City Managers' Association.

Appendix A

## EQUIPMENT RENTAL CHARGES, TACOMA, WASHINGTON

Rental charges are based on five items:

1. Maintenance and operational expense
2. Salaries
3. Materials
4. Fuel and oil costs
5. Depreciation of equipment

1. Maintenance and Operation Costs

In determining rental charges all factors such as insurance, licenses, taxes, building maintenance, building depreciation, rents, light, water, heat, telephone, tools and equipment, and replacement of tools, etc., have to be considered in the cost of operation of City-owned equipment. When these charges are properly allocated each department or division pays their share of the cost of operation.

In the past the department having the oldest equipment and/or the equipment needing the most repairs paid the largest share of the maintenance and operational costs. This also applied to the department or division which conscientiously tried to keep their equipment in good operating condition. The department or division that would save as much as possible on their maintenance budget would look good as far as the budget was concerned but were not carrying their just load of maintenance and operational expenses. This also presented a safety hazard as the equipment in many cases needed a brake reline, etc. Drivers of such equipment tend to be careless and the accident rate increases. This also applies to equipment which is not kept clean and painted.

To properly allocate M & O costs they should be prorated so that each piece of City-owned equipment is charged a share of the cost in proportion to its value and/or hours of maintenance service.

2. Salaries

Salaries of shop personnel should be prorated on the basis of the mileage and/or hours of operation to fairly proportion salary costs. Again, the same thinking as regarding proper allocation of maintenance and operation costs applies to salaries.

3. Materials

Cost of materials is based on material used during the two years, 1956 and 1957, prior to establishment of the Equipment Rental Fund. The cost of material is prorated depending upon the type of unit, age bracket, and miles and/or hours of service.

4. Fuel and Oil Costs

Fuel costs are based upon the actual use of fuel during previous years and prorated depending on the type and use of equipment. Estimated costs will be high on some units and low on other units, but, will average out when the entire fleet is considered.

5. Depreciation of Equipment

A truck is depreciated on the basis of the original purchase price of the truck less the tire equipment costs. There are several methods of depreciating a truck. One method is on a mileage basis. This is generally used on high mileage operations. Where this method is used depreciation is considered more as an operating cost than a fixed cost. The other method is the time basis, and there are several variations of this. In one method a fixed number of years is used and the annual depreciation is the same for each year. As an example, the purchase price is $6,000 and the unit is depreciated over a five-year period. The annual depreciation each year is $1,200 and the monthly depreciation is $100. Another method is to depreciate 5/15 of the purchase price the first year, 4/15 the second year, etc. On this basis the depreciation each year of a $6,000 truck would be as

follows: 1st year $2,000, 2nd year $1,600, 3rd year $1,200, 4th year $800, 5th year $400. Under this method the book value at the end of each year is more nearly that of its trade-in value. Another method is to take a certain per cent of the book value each year. As an example if 30% is used, the depreciation the first year would be 30% of $6,000 or $1,800. The second year the depreciation would be 30% of $4,200 ($6,000 minus $1,800) or $1,260. On this basis, as long as the truck is in operation it has a book value.

In setting up depreciation, the error is often made of depreciating all trucks in a fleet on the same basis regardless of type of operation, size or make. A quality truck will have more miles or more years of service than a truck that has a lesser number of quality features.

In the original rental and depreciation schedule for City of Tacoma equipment a straight line method, whereby the depreciation is the same each year, is used. This method allows us to cover any price raise with the salvage value of the unit. As we get on a paying basis it will be possible to depreciate units on different schedules in order to trade or sell equipment at the most practical time.

Depreciation at the present time is based as follows: Police patrol cars, two years; Police unmarked cars, five years; Passenger cars, five years; Pickup Trucks, seven years; Light 1½ ton and two-ton trucks, seven years; Heavy duty trucks, eight years; Heavy duty equipment such as graders, ten years.

Through a physical survey made of City equipment and using the above schedules it is possible to estimate the number of units which will need replacing each year. Through a depreciation charge in the Rental charges we will be able to set up a replacement schedule. There will not be enough depreciation reserve at first to replace equipment as scheduled, however, the replacement program will gradually work out through the years. If in an emergency it is necessary to replace equipment and the Equipment Rental Fund is short it might be possible to borrow funds from other City funds (general).

When a new piece of equipment, not a replacement is needed it should be provided for in the following year's budget by the division concerned. There should also be money available for rental of equipment for seasonal use or in emergencies. The monthly depreciation schedule per $100.00 of unit cost is as follows: for two, three, and four years, 4.166 per cent on 75 per cent of unit cost; for five and six years, 1.666 per cent; for seven years, 1.190 per cent; for eight and nine years, 1.042 per cent; for 10 years and over, 8.335 per cent.

Method of Determining Depreciation Schedule

Cost of equipment divided by number of months to be depreciated. Example: Passenger car - $1,600.00 cost of unit divided by 60 months = $26.666 per month. Monthly depreciation divided by cost of unit for percentage of each $100.00. Example: $26.666 divided by $1,600.00 = 1.666. $1,600.00 x 1.666 = $26.65 per month depreciation. This figure of 1.666 will always be the same regardless of equipment price if depreciation is figured on 60 months. Example of 84 month depreciation. Pickup trucks 84 months. Cost of equipment $1,600.00 divided by 84 months = $19.047 per month. $19.047 divided by $1,600.00 = 1.190 per 100 per month. $1.600 x 1.190 = $19.04 a month. Unit cost of $2,000.00 x 1.190 = $23.80 a month.

General

One of the problems in the past when a department was charged for labor and material was the emotional factor of paying a labor charge. This is no different in a City operation than it is in private business. I have yet to see a person who enjoyed paying for a brake reline or a valve job or any other repair. They don't mind paying $3,000.00 to $4,000.00 for a car, but will complain to everyone when they have to pay $48.00 for a valve job that takes 8 hours. It does not matter how legitimate this charge may be or what shop does the work the reaction is almost always the same. That is one of the reasons for service salesmen who explain each item of item of the bill. During past years many of the charges made to the departments was due to accidents. When the accident charge was recoverable from the other party it was not credited to the department concerned. Accidents should come under accident charges and not M & O regardless of who may be responsible or whether the accident was reported.

On a rental basis the various departments are no longer concerned about hourly labor charges,

but in turn, apply this same type of thinking to Rental Charges. The adjustment to fair rental charges can be overcome through proper explanation of these charges to the various division and department heads and to their personnel using cars. When the majority of people understand the reasons for and the breakdown of rental charges they will realize the benefits of that system. No matter how good an operation is it can be broken down by continual picking away at the foundation.

Prior to the Equipment Rental Fund a new part was purchased when the time element was of primary importance and when the cost of labor at $5.50 per hour would exceed the new cost of the part. Through the use of a preventative maintenance program and bringing equipment in for service during the off season the time factor is not always the deciding factor and many of our parts previously purchased can be machined or reworked at the Equipment Rental Fund Shops. Through prorating salaries and not charging individual departments by the hour, the cost of labor is no longer the primary factor and when it is possible to save money a part can be machined or reworked rather than buying a new part. This program will tend to save the City considerable money through the years and gradually bring down the rental price per unit. As new equipment replaces the old equipment parts replacement costs will go down.

During the first years of the Equipment Rental Fund program the maintenance program costs could possibly be greater than in prior years. This is due to the age and condition of the equipment and the many major repairs that will be necessary due to lack of capital for replacement of equipment. The heavier costs would be due to parts and material needed for the paint program, steam cleaning program and general over-all conditioning, and the fact that the majority of the equipment is past the economical replacement time.

Changing from one type of program to another will not lower costs overnight, however, as equipment is put into good operating condition or replaced with new equipment, costs will go down.

## Appendix B

## RULES ON ACCIDENT REPORTING, DALLAS, TEXAS

### ACCIDENT PROCEDURE – MOTOR VEHICLE

4.23 All accidents involving city vehicular equipment or accidents to privately-owned automobiles being used on official city business shall be reported.

4.24 The operator of a city vehicle or a private automobile being used on official business shall take the following actions when involved in an accident.

(a) Stop immediately and render aid if such is necessary.
(b) Personally call the Police Department and report the accident and injuries, if any.
(c) Make a record of the make, model and license number of the other vehicle. Secure the identity of the driver and names of other occupants and witnesses, if any.
(d) Be courteous but do not make or sign statements for anyone except the police.

Failure to comply with these instructions can result in disciplinary action.

4.25 Immediately upon return to headquarters, an employee involved in a motor vehicle accident shall make a full report of same on Form P-8.

4.26 The Police accident investigator shall make a report on Form CPS-APB-1A of every accident involving city-owned motor vehicle equipment, or involving motor vehicle equipment operated on city business. Copies of this form will be distributed as follows: city attorney, city department involved, city personnel department, municipal garage (city-owned equipment), and police department file.

4.27 The department head shall make available to the division head or supervisor the police report on Form CPS-APB-1A when an employee under his jurisdiction has been involved in a motor vehicle accident. The purpose being to assist him in determining employee responsibility. However, the accident investigator's statements regarding the circumstances surrounding the accident shall not be copied into the description of details on the employees report Form 8. The employee's statement must be his own.

4.28 A report of accident involving city equipment or privately-owned equipment used on city business (Form P 8), bearing the recommendations of both division and department heads, shall reach the Personnel Department within ten days following date of the accident.

## ACCIDENT REVIEW BOARD

4.29 The Accident Review Board was created by administrative order of the City Manager and is composed of four appointive members and the Personnel Director who serves as chairman.

4.30 It shall be the function of the Accident Review Board to meet at regular intervals and review all motor vehicle accidents involving city-owned equipment or privately-owned equipment used for city business, for the purpose of affixing responsibility for same.

4.31 The Accident Review Board in carrying out its function shall be governed by the following regulations which were adopted January 1, 1953:

"1. Any employee of the City of Dallas found chargeable by the Accident Review Board for an accident involving any motor vehicle as defined in Article 85-1, Section 2 (b) of the City of Dallas Code, may be required to settle any just claim for property damage. The Board shall have the authority to call upon any department or division of the city for assistance in determining the amount of a claim to be approved. Failure of the employee to settle an approved claim may result in dismissal from the service.

2. An employee may request review of his case by the Accident Review Board within the thirty days immediately following notification of their ruling. Upon receipt of a request routed through proper channels, the chairman will arrange for the employee's appearance before the Board, at which time the case will be reopened and additional information received and considered. Should the Board uphold its original decision, the employee may then appeal the case to the City Manager.

3. An employee of the City of Dallas who may be held chargeable for two motor vehicle accidents occurring within any twelve-month period after adoption of these regulations shall be: (1) required to submit to a physical examination by the Health Department and a psychophysical test by the driver training clinic; and (2) personally appear before the Accident Review Board. Any physical defect introduced which, in the opinion of the Health Director, would retard or impair the employee's ability to operate a motor vehicle with every degree of safety will result in that employee being permanently removed from operation of the City's motor vehicles. If no physical defect is found to exist, the employee shall be grounded for a period of sixty days. The head of the department or division in which the employee is assigned shall report to the Personnel Director on how the employee's services are to be used during the sixty-day grounding period. If the employee has no capabilities which can be utilized without his operating a motor vehicle and cannot qualify for another assignment, it will be necessary to remove him from the payroll. Involvement in any chargeable accident is considered an offense meriting disciplinary action. Should it become necessary to reduce or suspend a classified employee, the department must be governed by the pertinent sections of Rule XVI of the Rules and Regulations of the Civil Service Board, and the procedure for handling disciplinary actions as contained in the City Manager's memorandum of February 14, 1949.

4. Any employee having three accidents within any twelve-month period, whether nonchargeable or a combination of both nonchargeable and chargeable, shall be required to appear before the Accident Review Board, at which time, all three accidents will be reviewed and the employee reminded of any omitted or committed acts by him that may have contributed to the accidents. The Board also shall have the authority to summon the supervisor of the employee involved in accidents to determine whether he has been contributorily negligent by failure to give proper instruction or supervision.

5. Any employee having three chargeable accidents within any twelve-month period shall be permanently removed from the operation of any motor vehicle belonging to the City of Dallas. The head of the department or division in which the employee is assigned shall report to the Personnel Director on how the employee's services are to be used. If the employee has no capabilities which can be utilized without his operating a motor vehicle and cannot qualify for another assignment, it will be necessary to remove him from the payroll."